EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1	(acridine or dye or fluores$3 or eithidium) near12 (DNA or nucleic or RNA) near13 (loss or dissociat$3 or displac$4 or associat$3 or replac$4) near15 (metal or ion or copper or mercury or Hg or Cd)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/30 15:45
L2	3	(acridine or dye or fluores$3 or eithidium) near20 (DNA or nucleic or RNA) near20 (loss or dissociat$3 or displac$4 or associat$3 or replac$4) near20 (metal or ion or copper or mercury or Hg or Cd)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/30 15:46
L3	0	(acridine or dye or fluores$3 or eithidium) near20 (DNA or nucleic or RNA) near20 (loss or dissociat$3 or displac$4 or associat$3 or replac$4) near20 (toxicant or cadmium or zinc or chromium or pollutant)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/30 15:47
L4	15	(acridine or dye or fluores$3 or eithidium) near10 (DNA or nucleic or RNA) near15 (toxicant or cadmium or zinc or chromium or pollutant)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2007/08/30 15:47

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NEWS 1		Web Page for STN Seminar Schedule - N. America
NEWS 2	MAY 01	New CAS web site launched
NEWS 3	MAY 08	CA/CAplus Indian patent publication number format defined
NEWS 4	MAY 14	RDISCLOSURE on STN Easy enhanced with new search and display fields
NEWS 5	MAY 21	BIOSIS reloaded and enhanced with archival data
NEWS 6	MAY 21	TOXCENTER enhanced with BIOSIS reload
NEWS 7	MAY 21	CA/CAplus enhanced with additional kind codes for German patents
NEWS 8	MAY 22	CA/CAplus enhanced with IPC reclassification in Japanese patents
NEWS 9	JUN 27	CA/CAplus enhanced with pre-1967 CAS Registry Numbers
NEWS 10	JUN 29	STN Viewer now available
NEWS 11	JUN 29	STN Express, Version 8.2, now available
NEWS 12	JUL 02	LEMBASE coverage updated
NEWS 13	JUL 02	LMEDLINE coverage updated
NEWS 14	JUL 02	SCISEARCH enhanced with complete author names
NEWS 15	JUL 02	CHEMCATS accession numbers revised
NEWS 16	JUL 02	CA/CAplus enhanced with utility model patents from China
NEWS 17	JUL 16	CAplus enhanced with French and German abstracts
NEWS 18	JUL 18	CA/CAplus patent coverage enhanced
NEWS 19	JUL 26	USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS 20	JUL 30	USGENE now available on STN
NEWS 21	AUG 06	CAS REGISTRY enhanced with new experimental property tags
NEWS 22	AUG 06	BEILSTEIN updated with new compounds
NEWS 23	AUG 06	FSTA enhanced with new thesaurus edition
NEWS 24	AUG 13	CA/CAplus enhanced with additional kind codes for granted patents
NEWS 25	AUG 20	CA/CAplus enhanced with CAS indexing in pre-1907 records
NEWS 26	AUG 27	Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS 27	AUG 27	USPATOLD now available on STN
NEWS 28	AUG 28	CAS REGISTRY enhanced with additional experimental spectral property data

NEWS EXPRESS 29 JUNE 2007: CURRENT WINDOWS VERSION IS V8.2,
CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
AND CURRENT DISCOVER FILE IS DATED 05 JULY 2007.

NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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NEWS IPC8	For general information regarding STN implementation of IPC 8

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FILE 'HOME' ENTERED AT 15:50:20 ON 30 AUG 2007

=> file .meeting
'EVENTLINE' IS NOT A VALID FILE NAME
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files that are available. If you have requested multiple files, you can specify a corrected file name or you can enter "IGNORE" to continue accessing the remaining file names entered.
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ENTER A FILE NAME OR (IGNORE):ignore

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FULL ESTIMATED COST	0.21	0.21

FILE 'AGRICOLA' ENTERED AT 15:50:37 ON 30 AUG 2007

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=> (acridine or dye or fluores3 or eithidium)(10A)(DNA or nucleic or RNA)(15A) (toxicant or cadmium or zinc or chromium or pollutant)
UNMATCHED RIGHT PARENTHESIS 'EITHIDIUM)(10A'
The number of right parentheses in a query must be equal to the number of left parentheses.

=> (acridine or dye or fluorescent or fluorescer or eithidium)(10A)(DNA or nucleic or RNA)(15A) (toxicant or cadmium or zinc or chromium or pollutant)

L1	0	FILE AGRICOLA
L2	3	FILE BIOTECHNO
L3	0	FILE CONFSCI
L4	0	FILE HEALSAFE
L5	0	FILE IMSDRUGCONF
L6	11	FILE LIFESCI

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L7          12 FILE PASCAL

TOTAL FOR ALL FILES
L8          26 (ACRIDINE OR DYE OR FLUORESCENT OR FLUORESCER OR EITHIDIUM)(10A)
               (DNA OR NUCLEIC OR RNA)(15A) (TOXICANT OR CADMIUM OR ZINC OR
              CHROMIUM OR POLLUTANT)

=> (acridine or dye or fluorescent or fluorescer or ethidium)(10A)(DNA or nucleic
or RNA)(15A) (toxicant or cadmium or zinc or chromium or pollutant)
L9           0 FILE AGRICOLA
L10          4 FILE BIOTECHNO
L11          0 FILE CONFSCI
L12          1 FILE HEALSAFE
L13          0 FILE IMSDRUGCONF
L14         12 FILE LIFESCI
L15         16 FILE PASCAL

TOTAL FOR ALL FILES
L16         33 (ACRIDINE OR DYE OR FLUORESCENT OR FLUORESCER OR ETHIDIUM)(10A)(
               DNA OR NUCLEIC OR RNA)(15A) (TOXICANT OR CADMIUM OR ZINC OR
              CHROMIUM OR POLLUTANT)

=> l33 and (loss or dissociation or dissociated or replacement or replace or
replaced or associat or association)
L33 NOT FOUND
The L-number entered could not be found.  To see the definition
of L-numbers, enter DISPLAY HISTORY at an arrow prompt (=>).

=> (loss or dissociation or dissociated or replacement or replace or replaced or
associat or association) and l16
L17          0 FILE AGRICOLA
L18          3 FILE BIOTECHNO
L19          0 FILE CONFSCI
L20          0 FILE HEALSAFE
L21          0 FILE IMSDRUGCONF
L22          5 FILE LIFESCI
L23          3 FILE PASCAL

TOTAL FOR ALL FILES
L24         11 (LOSS OR DISSOCIATION OR DISSOCIATED OR REPLACEMENT OR REPLACE
               OR REPLACED OR ASSOCIAT OR ASSOCIATION) AND L16

=> dup rem
ENTER L# LIST OR (END):l24
DUPLICATE IS NOT AVAILABLE IN 'IMSDRUGCONF'.
ANSWERS FROM THESE FILES WILL BE CONSIDERED UNIQUE
PROCESSING COMPLETED FOR L24
L25          6 DUP REM L24 (5 DUPLICATES REMOVED)

=> d l25 ibib abs total

L25  ANSWER 1 OF 6  LIFESCI    COPYRIGHT 2007 CSA on STN
ACCESSION NUMBER:   2004:94796  LIFESCI
TITLE:              The in Vitro Cytopathology of a Porcine and the Simian
                    (SA-11) Strains of Rotavirus
AUTHOR:             Castilho, J.G.; Botelho, M.V.J.; Lauretti, F.; Taniwaki,
                    N.; Linhares, R.E.C.; Nozawa, C.
CORPORATE SOURCE:   Departamento de Microbiologia, CCB, Universidade Estadual
                    de Londrina, Caixa Postal 6001, 86051-970 Londrina, PR,
                    Brasil; E-mail: cnoz@uel.br
SOURCE:             Memorias do Instituto Oswaldo Cruz [Mem. Inst. Oswaldo
                    Cruz], (20040500) vol. 99, no. 3, pp. 313-317.
                    ISSN: 0074-0276.
DOCUMENT TYPE:      Journal
```

FILE SEGMENT: V
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Rotaviruses have been implicated as the major causal agents of acute diarrhoea in mammals and fowls. Experimental rotavirus infection have been associated to a series of sub-cellular pathologic alterations leading to cell lysis which may represent key functions in the pathogenesis of the diarrhoeic disease. The current work describes the cytopathic changes in cultured MA-104 cells infected by a simian (SA-11) and a porcine (1154) rotavirus strains. Trypan blue exclusion staining showed increased cell permeability after infection by both strains, as demonstrated by cell viability. This effect was confirmed by the leakage of infected cells evaluated by chromium release. Nuclear fragmentation was observed by acridine orange and Wright staining but specific DNA cleavage was not detected. Ultrastructural changes, such as chromatin condensation, cytoplasm vacuolisation, and loss of intercellular contact were shown in infected cells for both strains. In situ terminal deoxynucleotidyl transferase (Tunel) assay did not show positive result. In conclusion, we demonstrated that both strains of rotavirus induced necrosis as the major degenerative effect.

L25 ANSWER 2 OF 6 LIFESCI COPYRIGHT 2007 CSA on STN DUPLICATE 1
ACCESSION NUMBER: 2003:37941 LIFESCI
TITLE: Zinc-metallothionein protects from DNA damage induced by radiation better than glutathione and copper- or cadmium-metallothioneins
AUTHOR: Cai, L.; Cherian, M.G.
CORPORATE SOURCE: Department of Pathology, University of Western Ontario, London, Ont. Canada N6A 5C1; E-mail: l0cai001@gwise.louisville.edu
SOURCE: Toxicology Letters [Toxicol. Lett.], (20030113) vol. 136, no. 3, pp. 193-198.
ISSN: 0378-4274.
DOCUMENT TYPE: Journal
FILE SEGMENT: X
LANGUAGE: English
SUMMARY LANGUAGE: English
AB Protection of radiation-induced DNA damage by metallothionein (MT) has been documented, but there is no detailed information about its efficiency compared to other antioxidants or the effect of metals which bind to MT on the protective effect of MT in radiation-induced DNA damage. In this study, we used a cell-free system to investigate the effect of MT with other antioxidants, such as albumin and glutathione and we compared the efficiency of MT bound to different metals on radiation-induced DNA damage. DNA damage was measured by loss in ethidium bromide/DNA fluorescence and increased mobility of DNA on gel electrophoresis. Gamma rays at 30 Gy induced significant DNA damage and zinc-MT showed a significant higher protection from radiation-induced DNA damage than both glutathione and albumin. Metallothionein bound to other metals, such as copper and cadmium, also showed protection of radiation-induced DNA damage, but the protective effect by zinc-MT was the highest. These results suggest that MT, in particular bound to zinc, is a high-capacity antioxidant to protect radiation- induced DNA damage.

L25 ANSWER 3 OF 6 PASCAL COPYRIGHT 2007 INIST-CNRS. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 2002-0125591 PASCAL
COPYRIGHT NOTICE: Copyright .COPYRGT. 2002 INIST-CNRS. All rights reserved.
TITLE (IN ENGLISH): In vitro suppression of thymocyte apoptosis by metal-rich complex environmental mixtures: potential role of zinc and cadmium excess
AUTHOR: CHUKHLOVIN Alexei B.; TOKALOV Sergei V.; YAGUNOV

Alexei S.; WESTENDORF Johannes; REINCKE Heinrich; KARBE Ludwig

CORPORATE SOURCE: Center of Hematology, St. Petersburg State Medical University, 6/8 L. Tolstoy St., St. Petersburg 187022, Russian Federation; Central Research Institute of Roentgenology and Radiology, Pesochny-2, 189646, St. Petersburg, Russian Federation; Institute of Experimental and Clinical Pharmacology and Toxicology, University of Hamburg, Vogt-Koelln ST. 30, 22527, Hamburg, Germany, Federal Republic of; Elbe River Water Quality Board, Nessdeich 120-121, 21129, Hamburg, Germany, Federal Republic of; Institute of Hydrobiology and Fisheries Science, University of Hamburg, Zeiseweg 9, 22765, Hamburg, Germany, Federal Republic of

SOURCE: Science of the total environment, (2001), 281(1-3), 153-163, refs. 1 p.1/4
ISSN: 0048-9697 CODEN: STENDL

DOCUMENT TYPE: Journal
BIBLIOGRAPHIC LEVEL: Analytic
COUNTRY: Ireland
LANGUAGE: English
AVAILABILITY: INIST-15662, 354000103409260120

AN 2002-0125591 PASCAL

AB Excessive amounts of heavy metals (e.g. Zn, Cu, Mn, Cr) are accumulated in river bottom sediments (RBS), being available to humans and animals along food chains. Increased exposure of mammals to certain metals (Cr, Cu) induces immunosuppresion, due to DNA damage and decreased survival of lymphoid cells. By contrast, excess of Zn and Cd causes inhibition of apoptosis thus suggesting increased survival of genetically mutated cells and higher cancer risks in exposed populations. Rat thymic lymphocytes represent a well-established model for apoptosis testing. The primary goal of our study was to assess the degree of apoptosis modulation with a number of RBS extracts differing in their metal contents. A series of freshly deposited RBS was collected at nine sampling stations along the Elbe River. All sediments were rich in Fe, Mn and Zn. The contents of Cu, Cr, Ni, Cd, Hg. Pb and As were much lower and interrelated. The short-term cytotoxicity of aqueous sediment extracts was assessed, using the following criteria: total cell counts; incidence of apoptosis and necrosis (morphological detection by fluorescent microscopy); and nuclear chromatin decay (by DNA flow cytometry). RBS extracts produced both apoptosis and necrosis of thymocytes. High contents of zinc and other heavy metals in the samples correlated with decreased thymocyte apoptosis ($r = -0.543$ to -0.608, $P<0.01$). The rates of thymocyte damage showed a distinct dependence on the time and region of sampling. Apoptosis modulation was also tested with pure salts of Mn(II), Zn(II), Cu(II), Cr(III) and Cd(II), at the test concentrations of 1. 10 and 100 μM. Cu(II) and Cr(III) proved to induce marked dose-related apoptosis whereas Zn(II) ions caused significant suppression of apoptosis. These effects were similar to those trends observed with metal-rich sediments. In the present study. DNA flow cytometry proved to be a less sensitive index of cell death than morphological assay of apoptosis and/or necrosis. In summary, inhibition of lymphocyte apoptosis by RBS extracts and pure metals is associated with excess of zinc and, probably, cadmium. The proposed model of lymphoid cell apoptosis is a promising tool for screening cytotoxic effects of complex environmental samples.

L25 ANSWER 4 OF 6 BIOTECHNO COPYRIGHT 2007 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 2000:30212648 BIOTECHNO

TITLE: Fluorescent and photochemical properties of a single zinc finger conjugated to a

fluorescent DNA-binding probe
AUTHOR: Thompson M.; Woodbury N.W.
CORPORATE SOURCE: N.W. Woodbury, Dept. of Chemistry and Biochemistry, Arizona State University, Tempe, AZ 85287-1604, United States.
E-mail: NWoodbury@asu.edu
SOURCE: Biochemistry, (18 APR 2000), 39/15 (4327-4338), 87 reference(s)
CODEN: BICHAW ISSN: 0006-2960
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 2000:30212648 BIOTECHNO
AB A single zinc finger derived from the DNA-binding domain of the glucocorticoid receptor (GR) has been tethered to the intercalating fluorophore thiazole orange, and the DNA recognition characteristics of the conjugate have been examined. DNA sequence specificity for the peptide-dye conjugate, determined by steady-state fluorescence measurements and photoactivated DNA cleavage experiments, reproduce the binding features of response element recognition found in the native GR. The thiazole orange is able to intercalate and fluoresce when the conjugate binds, at concentrations where little fluorescence is observed from either the conjugate alone or the conjugate mixed with DNA lacking the zinc finger target sequence. The conjugate preferentially targets a 5'-TGTTCT-3' sequence (the native glucocorticoid receptor element) with a dissociation constant of about 25 nM. Lower binding affinities (up to 10-fold) are observed for single site variants of this sequence, and much lower affinity (40-50-fold) is observed for binding to the estrogen response element (which differs from the glucocorticoid receptor element at two positions) as well as to nonspecific DNA. Footprinting reactions show a 4-6 base pair region that is protected by the zinc finger moiety. Photocleavage assays reveal a several base pair region flanking the recognition sequence where the tethered thiazole orange moiety is able to intercalate and subsequently cleave DNA upon visible light exposure. Thiazole orange is also shown to oxidize the 5'-G of remote GG sequences, depending on the details of the intervening DNA sequence. Small synthetic protein-dye conjugates such as this one are potentially useful for a variety of purposes including sequence-specific probes that work under physiological conditions (without melting and hybridization of DNA), sequence-specific photocleavage agents, and self-assembling components in electron and energy transfer systems that utilize DNA as a scaffold and/or photochemical medium.

L25 ANSWER 5 OF 6 BIOTECHNO COPYRIGHT 2007 Elsevier Science B.V. on STN
DUPLICATE
ACCESSION NUMBER: 1999:29249985 BIOTECHNO
TITLE: Identification of a novel zinc finger gene, zf5-3, as a potential mediator of neuroblastoma differentiation
AUTHOR: Dimitroulakos J.; Pienkowska M.; Sun P.; Farooq S.; Zielenska M.; Squire J.A.; Yeger H.
CORPORATE SOURCE: J. Dimitroulakos, Dept. of Paediatric Lab. Medicine, Hospital for Sick Children, 555 University Avenue, Toronto, Ont. M5G 1X8, Canada.
E-mail: hermie@sickkids.on.ca
SOURCE: International Journal of Cancer, (1999), 81/6 (970-978), 20 reference(s)
CODEN: IJCNAW ISSN: 0020-7136
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1999:29249985 BIOTECHNO
AB We established a unique parental neuroblastoma cell line, NUB-7, which

mimics the bipotentiality of neuroblastoma in vivo along neuronal and Schwann cell lineages following dibutyryl cAMP and retinoic acid treatments, respectively. Differential display identified a putative novel zinc finger gene as a potential differentiation-responsive gene coincident with retinoic acid treatment of NUB-7. This cDNA clone, now designated zf5-3, was mapped to chromosome 19 using somatic cell hybrids, and a larger cDNA clone further localized this gene to band 13.1-13.2 by fluorescent in situ hybridization, zf5-3 possesses 4 characteristic zinc finger DNA-binding motifs as determined by its nucleic acid and proposed amino acid sequence. Expression of zf5-3 is restricted to fetal neuronal, hepatic and renal tissues and their tumor- derived cell lines, including 8/9 neuroblastomas and 2/2 malignant rhabdoid tumors of kidney. The restricted expression in the kidney of zf5-3 to collecting tubules and ureter epithelium is suggestive of an ectodermal histogenesis of malignant rhabdoid tumors of kidney. During development of the fetal human brain, high levels of zf5-3 mRNA are restricted to the mitotically active, undifferentiated neuroblasts. Morphological evidence of overt differentiation was generally accompanied by a marked loss in zf5-3 expression. Therefore, the neuronal tissue expression profile and the down-regulation coincident with retinoic acid-induced neuroblastoma maturation implicate zf5-3 as a potential mediator of their differentiation.

L25 ANSWER 6 OF 6 BIOTECHNO COPYRIGHT 2007 Elsevier Science B.V. on STN
DUPLICATE

ACCESSION NUMBER: 1992:22326319 BIOTECHNO
TITLE: Inhibition of apoptosis by zinc: A reappraisal
AUTHOR: Barbieri D.; Troiano L.; Grassilli E.; Agnesini C.; Cristofalo E.A.; Monti D.; Capri M.; Cossarizza A.; Franceschi C.
CORPORATE SOURCE: Istituto di Patologia Generale, University of Modena, Via Campi 287,41100 Modena, Italy.
SOURCE: Biochemical and Biophysical Research Communications, (1992), 187/3 (1256-1261)
CODEN: BBRCA0 ISSN: 0006-291X
DOCUMENT TYPE: Journal; Article
COUNTRY: United States
LANGUAGE: English
SUMMARY LANGUAGE: English
AN 1992:22326319 BIOTECHNO
AB Apoptosis - or programmed cell death - is an active type of cell death, occurring in several pathophysiological conditions. One of the most important characteristics of apoptosis is that cell death is preceded by DNA fragmentation, consequent to the activation of nuclear calcium- and magnesium-dependent endonuclease(s). DNA fragmentation can be inhibited by zinc ions. By using several techniques, such as DNA agarose gel electrophoresis, cytofluorimetric analysis of DNA content and of cell cycle, .sup.3H-thymidine incorporation and trypan blue dye exclusion test, we show that zinc, despite completely inhibiting DNA fragmentation and the consequent loss of nuclear DNA content, does not protect rat thymocytes from spontaneous or dexamethasone-induced death. Our data also suggest that DNA fragmentation, although characteristic, is not a critical event for thymocyte death of apoptotic type.

=> file .chemistry

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	25.66	25.87

FILE 'CAPLUS' ENTERED AT 15:57:04 ON 30 AUG 2007
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L26 61 FILE CAPLUS
L27 4 FILE BIOTECHNO
L28 13 FILE COMPENDEX
L29 2 FILE ANABSTR
L30 0 FILE CERAB
L31 1 FILE METADEX
L32 36 FILE USPATFULL

TOTAL FOR ALL FILES
L33 117 (ACRIDINE OR DYE OR FLUORESCENT OR FLUORESCER OR ETHIDIUM)(10A)(DNA OR NUCLEIC OR RNA)(15A) (TOXICANT OR CADMIUM OR ZINC OR CHROMIUM OR POLLUTANT)

=> (acridine or dye or fluorescent or fluorescer or ethidium)(6A)(DNA or nucleic or RNA)(10A) (toxicant or cadmium or zinc or chromium or pollutant)
L34 38 FILE CAPLUS
L35 1 FILE BIOTECHNO
L36 5 FILE COMPENDEX
L37 0 FILE ANABSTR
L38 0 FILE CERAB
L39 1 FILE METADEX
L40 16 FILE USPATFULL

TOTAL FOR ALL FILES
L41 61 (ACRIDINE OR DYE OR FLUORESCENT OR FLUORESCER OR ETHIDIUM)(6A)(DNA OR NUCLEIC OR RNA)(10A) (TOXICANT OR CADMIUM OR ZINC OR CHROMIUM OR POLLUTANT)

=> l41 and (loss or dissociation or dissociated or replacement or replace or replaced or associat or association)
L42 10 FILE CAPLUS
L43 1 FILE BIOTECHNO
L44 0 FILE COMPENDEX
L45 0 FILE ANABSTR
L46 0 FILE CERAB
L47 0 FILE METADEX
L48 15 FILE USPATFULL

TOTAL FOR ALL FILES
L49 26 L41 AND (LOSS OR DISSOCIATION OR DISSOCIATED OR REPLACEMENT OR

REPLACE OR REPLACED OR ASSOCIAT OR ASSOCIATION)

=> dup rem
ENTER L# LIST OR (END):l42-l43
PROCESSING COMPLETED FOR L42
PROCESSING COMPLETED FOR L43
L50 10 DUP REM L42-L43 (1 DUPLICATE REMOVED)

=> d l50 ibib abs total

L50 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:1264972 CAPLUS
DOCUMENT NUMBER: 146:179004
TITLE: Photoinduced Intramolecular Electron-Transfer Reactions of Reconstituted Met- and Zinc -Myoglobins Appending Acridine and Methylacridinium Ion as DNA-Binders
AUTHOR(S): Takashima, Hiroshi; Tara, Chisako; Namikawa, Sachiko; Kato, Tomoko; Araki, Yasuyuki; Ito, Osamu; Tsukahara, Keiichi
CORPORATE SOURCE: Department of Chemistry, Faculty of Science, Nara Women's University, Nara, 630-8506, Japan
SOURCE: Journal of Physical Chemistry B (2006), 110(51), 26413-26423
CODEN: JPCBFK; ISSN: 1520-6106
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Three types of reconstituted met- and zinc-myoglobin (metMb and ZnMb) dyads, ZnMbAc(4)Me+, ZnMbAc(6)Me+, and metMbAc(6) have been prepared by incorporating chemical modified metalloporphyrin cofactor appending an acridine (Ac) or a methylacridinium ion ([AcMe]+) into apo-Mb. In the bimol. system between ZnMb and [AcMe]+, the photoexcited triplet state of ZnMb, 3(ZnMb)*, was successfully quenched by [AcMe]+ to form the radical pair of ZnMb cation (ZnMb•+) and reduced methylacridine ([AcMe]•), followed by a thermal back ET reaction. The rate consts. for the intermol. quenching ET (kq) and the back ET reaction (kb) at 25° were successfully obtained as kq = (8.8±0.4) + 107 M-1 s-1 and kb = (1.2±0.1) + 108 M-1 s-1, resp. On the other hand, in case of the intramol. photoinduced ET reactions of ZnMbAc(4)Me+ and ZnMbAc(6)Me+ dyads, the first-order quenching rate consts. (kET) of 3(ZnMb)* by [AcMe]+ moiety were determined to be kET = 2.6+103 and 2.5+103 s-1, resp. When such ET occurs along the alkyl spacer via through-bond mechanism at the surface of Mb, the obtained kET is reasonable to provide decay constant of β (1.0-1.3 Å-1). Upon photoirradn. of [AcMe]+ moiety, kinetic studies also presented the intramol. quenching reactions from the excited singlet state, 1([AcMe]+)*, whose likely process is the photoinduced energy-transfer reaction. For metMbAc(6) dyad, steady-state fluorescence was almost quenched, while the signal around 440 nm gradually appeared in the presence of various concns. of DNA. Our study implies that synthetic manipulation at the Mb surface, by using an artificial DNA-binder coupled with photoinduced reaction, may provide valuable information to construct new Mb-DNA complex and sensitive fluorescent for DNA.
REFERENCE COUNT: 115 THERE ARE 115 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 2 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2006:333948 CAPLUS
DOCUMENT NUMBER: 145:42515
TITLE: Sensing Metal Ions with DNA Building Blocks: Fluorescent Pyridobenzimidazole Nucleosides
AUTHOR(S): Kim, Su Jeong; Kool, Eric T.
CORPORATE SOURCE: Department of Chemistry, Stanford University,

Stanford, CA, 94305-5080, USA
SOURCE: Journal of the American Chemical Society (2006), 128(18), 6164-6171
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 145:42515
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* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The authors describe novel fluorescent N-deoxyribosides (I and II) having 2-pyrido-2-benzimidazole and 2-quino-2-benzimidazole as aglycons. The compds. were prepared from the previously unknown heterocyclic precursors and Hoffer's chlorosugar, yielding alpha anomers as the chief products. X-ray crystal structures confirmed the geometry and showed that the pyridine and benzimidazole ring systems deviated from coplanarity in the solid state by 154° and 140°, resp. In methanol the compds. I and II had absorption maxima at 360 and 370 nm, resp., and emission maxima at 494 and 539 nm. Expts. revealed varied fluorescence responses of the nucleosides to a panel of 17 monovalent, divalent, and trivalent metal ions in methanol. One or both of the nucleosides showed significant changes with 10 of the metal ions. The most pronounced spectral changes for ligand-nucleoside I included red shifts in fluorescence (Au+, Au3+), strong quenching (Cu2+, Ni2+, Pt2+), and substantial enhancements in emission intensity coupled with red shifts (Ag+, Cd2+, Zn2+). The greatest spectral changes for ligand-nucleoside II included a red shift in fluorescence (Ag+), a blue shift (Cd2+), strong quenching (Pd2+, Pt2+), and substantial enhancements in emission intensity coupled with a blue shift (Zn2+). The compds. could be readily incorporated into oligodeoxynucleotides, where an initial study revealed that they retained sensitivity to metal ions in aqueous solution and demonstrated possible cooperative sensing behavior with several ions. The two free nucleosides alone can act as differential sensors for multiple metal ions, and they are potentially useful monomers for contributing metal ion sensing capability to DNAs.
REFERENCE COUNT: 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:604629 CAPLUS
DOCUMENT NUMBER: 143:262810
TITLE: DNA Sequence-Enabled Reassembly of the Green Fluorescent Protein
AUTHOR(S): Stains, Cliff I.; Porter, Jason R.; Ooi, Aik T.; Segal, David J.; Ghosh, Indraneel
CORPORATE SOURCE: Department of Chemistry, Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ, 85721, USA
SOURCE: Journal of the American Chemical Society (2005), 127(31), 10782-10783
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors describe a general methodol. for the direct detection of DNA by the design of a split-protein system that reassembles to form an active complex only in the presence of a targeted DNA sequence. This approach, called SEquence Enabled Reassembly (SEER) of proteins, combines the ability to rationally dissect proteins to construct oligomerization-

dependent protein reassembly systems and the availability of DNA binding Cys2-His2 zinc-finger motifs for the recognition of specific DNA sequences. The authors demonstrate the feasibility of the SEER approach utilizing the split green fluorescent protein appended to appropriate zinc fingers, such that chromophore formation is only catalyzed in the presence of DNA sequences that incorporate binding sites for both zinc fingers.
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2005:342699 CAPLUS
DOCUMENT NUMBER: 143:39782
TITLE: DNA binding of a molecular-scale receptor in the presence of zinc(II) ions
AUTHOR(S): Benniston, Andrew C.; Harriman, Anthony; Lawrie, Donald J.; Mehrabi, Maryam
CORPORATE SOURCE: Molecular Photonics Laboratory, School of Natural Sciences (Chemistry), University of Newcastle, Newcastle upon Tyne, NE1 7RU, UK
SOURCE: European Journal of Organic Chemistry (2005), (7), 1384-1391
CODEN: EJOCFK; ISSN: 1434-193X
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The properties of a tritopic artificial biol. probe are described. This probe consists of a luminescent pyrene-thiophene unit connected by an ethynylene group to a 2,2':6',2''-terpyridine (terpy) cation binding site. The pyrene unit, as evidenced by fluorescence spectroscopy under illumination at 400 nm, is capable of intercalating into double-stranded calf-thymus DNA in H2O (buffered, pH = 7.0) at 25°. The binding constant K was calculated to be 6.0 + 105M-1. Titration of zinc(II) ions in an aqueous (pH = 7.0) solution containing the intercalated probe results in fluorescence quenching which again is a consequence of the zinc(II) ions binding to the terpy site. The DNA-bound probe has also been shown to undergo singlet energy transfer to intercalated ethidium bromide with a rate constant of 9.4 + 109 s-1.
REFERENCE COUNT: 78 THERE ARE 78 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 5 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:311233 CAPLUS
DOCUMENT NUMBER: 139:197739
TITLE: Synthesis and evaluation of peptidomimetics that bind DNA
AUTHOR(S): Turk, Jeffrey A.; Smithrud, David B.
CORPORATE SOURCE: Department of Chemistry, University of Cincinnati, Cincinnati, OH, 45221-0172, USA
SOURCE: Bioorganic & Medicinal Chemistry (2003), 11(10), 2355-2365
CODEN: BMECEP; ISSN: 0968-0896
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 139:197739
AB A peptidomimetic template, consisting of a hydrophobic scaffold, a dansyl fluorophore, and an Arg-His recognition strand, was tested as a simple mimic of zinc finger 2 of the Zif268 protein. Assocn. consts. (KA's) were on the order of 105 M-1 for complexes formed between the mimetic and duplexes d(CGGGAATTCCCG)2 and d(AAAAAAAAATTTTTTTTT)2. Modest selectivity was observed for the GC-rich DNA in a 0.5 M NaCl/buffer (0.1 M phosphate, pH 7.0) solution Differences in KA's along with observed CD profiles
suggest that the mimetic associated with the duplexes using different binding

modes. The DNA duplexes had weaker interactions with the free Arg-His recognition strand, the dansyl functional group, and a scaffold that contained only glycines as the recognition strand. The scaffold most likely provides for greater van der Waals interactions, a larger hydrophobic effect upon assocn., and reduces the freedom of motion of the side chains. This last effect was confirmed by mol. mechanics calcns. and by the fact that the mimetic suffered a smaller loss of entropic energy upon assocn. than the free recognition strand. These studies show that the synthetic scaffold is a promising platform in which peptides can be attached to increase their affinity and possibly selectivity for DNA targets.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 6 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:891633 CAPLUS
DOCUMENT NUMBER: 140:386526
TITLE: Fluorescent microplate-based analysis of protein-DNA interactions II: Immobilized DNA
AUTHOR(S): Zhang, Zhan-ren; Hughes, Marcus D.; Morgan, Leonie J.; Santos, Albert F.; Hine, Anna V.
CORPORATE SOURCE: Aston University, Birmingham, UK
SOURCE: BioTechniques (2003), 35(5), 988,990,992,994,996
CODEN: BTNQDO; ISSN: 0736-6205
PUBLISHER: Eaton Publishing Co.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A simple protein-DNA interaction anal. has been developed using both a high-affinity/high-specificity zinc finger protein and a low-specificity zinc finger protein with nonspecific DNA binding capability. The latter protein is designed to mimic background binding by proteins generated in randomized or shuffled gene libraries. In essence, DNA is immobilized onto the surface of microplate wells via streptavidin capture, and green fluorescent protein (GFP)-labeled protein is added in solution as part of a crude cell lysate or protein mixture After incubation and washing, bound protein is detected in a standard microplate reader. The min. sensitivity of the assay is approx. 0.4 nM protein. The assay format is ideally suited to investigate the interactions of DNA binding proteins from within crude cell exts. and/or mixts. of proteins that may be encountered in protein libraries generated by codon randomization or gene shuffling.

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 7 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2003:891632 CAPLUS
DOCUMENT NUMBER: 140:386525
TITLE: Fluorescent microplate-based analysis of protein-DNA interactions I: Immobilized protein
AUTHOR(S): Zhang, Zhan-ren; Palfrey, David; Nagel, David A.; Lambert, Peter A.; Jessop, Robert A.; Santos, Albert F.; Hine, Anna V.
CORPORATE SOURCE: Aston University, Birmingham, UK
SOURCE: BioTechniques (2003), 35(5), 980,982,984,986
CODEN: BTNQDO; ISSN: 0736-6205
PUBLISHER: Eaton Publishing Co.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A simple protein-DNA interaction anal. has been developed using a high-affinity/high-specificity zinc finger protein. In essence, purified protein samples are immobilized directly onto the surface of microplate wells, and fluorescently labeled DNA is added in solution After incubation and washing, bound DNA is detected in a standard microplate reader. The min. sensitivity of the assay is approx. 0.2 nM DNA. Since the detection of bound DNA is noninvasive and the protein-DNA interaction is not disrupted

during detection, iterative readings may be taken from the same well, after successive alterations in interaction conditions, if required. In this respect, the assay may therefore be considered real time and permits appropriate interaction conditions to be determined quant. The assay format is ideally suited to investigate the interactions of purified unlabeled DNA binding proteins in a high-throughput format.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2004:314246 CAPLUS
DOCUMENT NUMBER: 142:134915
TITLE: Syntheses of new artificial zinc finger proteins containing trisbipyridine-ruthenium amino acid at the N- or C-terminus as fluorescent probes
AUTHOR(S): Kobayashi, Shigenori; Kaneko, Kenji; Sugiyama, Masashi; Onoda, Akira; Yamamura, Takeshi
CORPORATE SOURCE: Department of Chemistry, Faculty of Science, Tokyo University of Science, Tokyo, 162-8601, Japan
SOURCE: Peptide Science (2003), Volume Date 2004, 40th, 429-430
CODEN: PSCIFQ; ISSN: 1344-7661
PUBLISHER: Japanese Peptide Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A symposium report. We developed strict DNA markers by the coupling of zinc finger (ZF) motif and TbpM(II) (M = Ru and Os), the unnatural amino acids having trisbipyridine-ruthenium and -osmium moieties in the side chains. Gel mobility shift assay revealed that the dissocn. constant of the ZF containing TbpRu(II) was as low as Kd = 3.6 nM.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 9 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN
ACCESSION NUMBER: 2002:134211 CAPLUS
DOCUMENT NUMBER: 136:180166
TITLE: Methods using properties of peptide/dye conjugates to detect DNA
INVENTOR(S): Thompson, Martin; Woodbury, Neal W.
PATENT ASSIGNEE(S): The Arizona Board of Regents, USA
SOURCE: U.S., 22 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 6348317	B1	20020219	US 2000-713950		20001116
PRIORITY APPLN. INFO.:			US 1999-166139P	P	19991118

AB The invention concerns a method of identifying the presence or absence of a DNA mol. in a test sample comprising a specific DNA sequence is disclosed. In one embodiment, the method comprises the steps of mixing a test sample with a peptide/dye conjugate comprising a covalently linked peptide and a dye, wherein the peptide binds to the specific DNA sequence and wherein the peptide/dye conjugate will fluoresce if the peptide is bound to the specific DNA sequence, and measuring fluorescence, wherein specific fluorescence above background level indicates that the conjugate is bound to the specific DNA sequence. In another embodiment, the present invention is a method of cleaving a specific DNA mol. and a test sample. The method comprises mixing a test sample with a peptide dye conjugate comprising a covalently linked peptide and a dye, wherein the peptide binds to the specific DNA sequence and wherein the peptide dye conjugate

will cleave if the peptide is bound to a specific DNA sequence.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2000:185162 CAPLUS
DOCUMENT NUMBER: 133:40052
TITLE: Fluorescent and Photochemical Properties of a Single Zinc Finger Conjugated to a Fluorescent DNA-Binding Probe
AUTHOR(S): Thompson, Martin; Woodbury, Neal W.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ, 85287-1604, USA
SOURCE: Biochemistry (2000), 39(15), 4327-4338
CODEN: BICHAW; ISSN: 0006-2960
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A single zinc finger derived from the DNA-binding domain of the glucocorticoid receptor (GR) has been tethered to the intercalating fluorophore thiazole orange, and the DNA recognition characteristics of the conjugate have been examined DNA sequence specificity for the peptide-dye conjugate, determined by steady-state fluorescence measurements and photoactivated DNA cleavage expts., reproduce the binding features of response element recognition found in the native GR. The thiazole orange is able to intercalate and fluoresce when the conjugate binds, at concns. where little fluorescence is observed from either the conjugate alone or the conjugate mixed with DNA lacking the zinc finger target sequence. The conjugate preferentially targets a 5'-TGTTCT-3' sequence (the native glucocorticoid receptor element) with a dissocn. constant of about 25 nM. Lower binding affinities (up to 10-fold) are observed for single site variants of this sequence, and much lower affinity (40-50-fold) is observed for binding to the estrogen response element (which differs from the glucocorticoid receptor element at two positions) as well as to nonspecific DNA. Footprinting reactions show a 4-6 base pair region that is protected by the zinc finger moiety. Photocleavage assays reveal a several base pair region flanking the recognition sequence where the tethered thiazole orange moiety is able to intercalate and subsequently cleave DNA upon visible light exposure. Thiazole orange is also shown to oxidize the 5'-G of remote GG sequences, depending on the details of the intervening DNA sequence. Small synthetic protein-dye conjugates such as this one are potentially useful for a variety of purposes including sequence-specific probes that work under physiol. conditions (without melting and hybridization of DNA), sequence-specific photocleavage agents, and self-assembling components in electron and energy transfer systems that utilize DNA as a scaffold and/or photochem. medium.
REFERENCE COUNT: 87 THERE ARE 87 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT